

Presentation



by Laszlo (Les) Bruzsa

**Case Study –
Queensland's experience
with PBS Level 2B
combinations**

Overview

- Background
 - Freight task
 - Challenges
 - Performance Based Standards
- Toowoomba – Port application
- Innovative vehicle options and examples
- Summary and conclusions

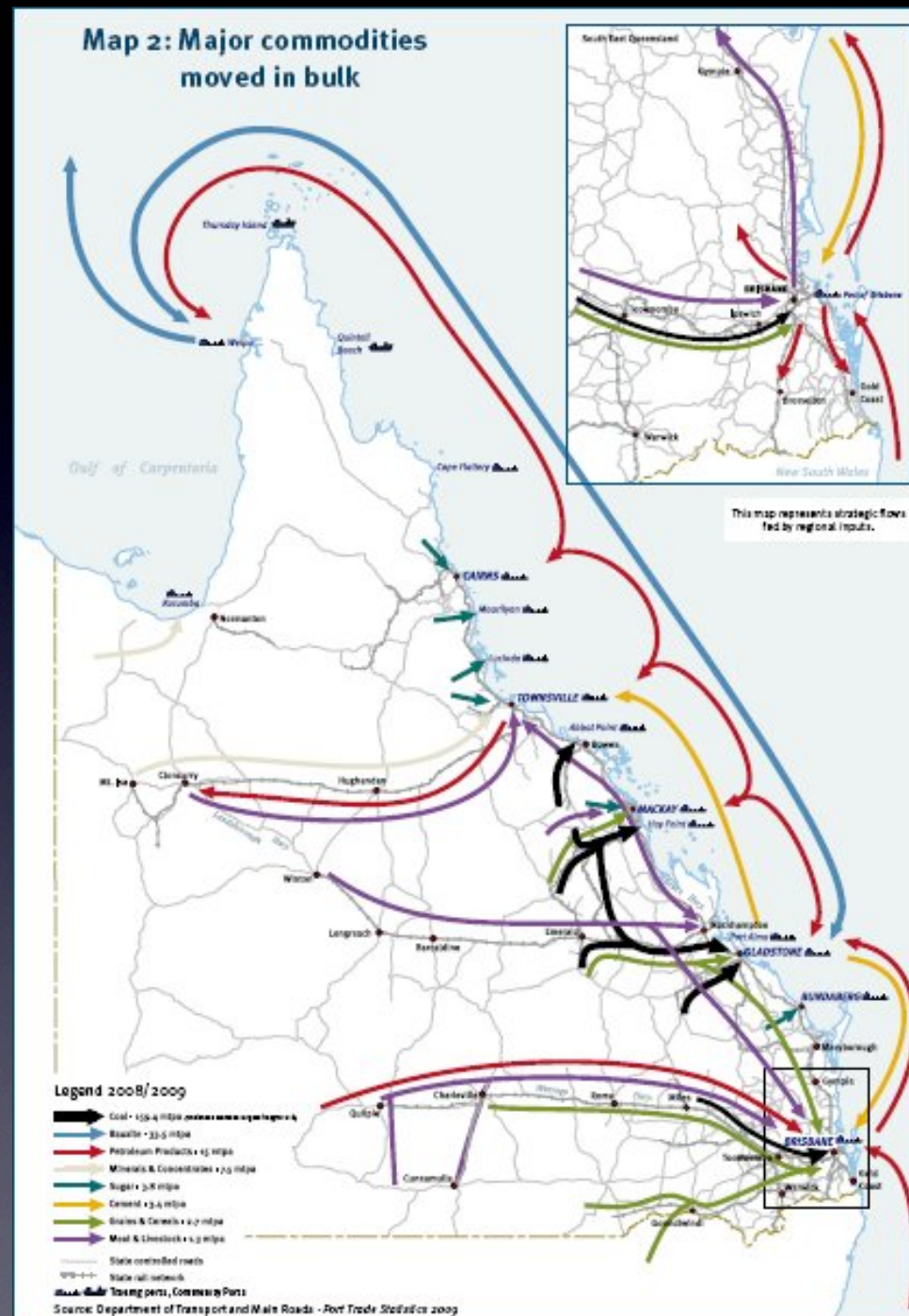
Context – Queensland



- Rapid growth
- 100,000 new residents every year
- Estimated freight increase: 865 million tonnes in 2009, between 1.8-2.2 billion tonnes in 2030
- Increasing demand for freight
- Pressure on the transport system

Context – Grain

- 3 regions, some 575,000 sq km, contain significant grain-growing areas
 - Daring Downs
 - Fitzroy
 - South West
- 2.6 M tonnes thru Toowoomba east via rail & road



Context – Transport Bottleneck

- After a decade of drought, bumper crops (2010/11 production 165% up on 2009/10)
- Grain sector withdrew from a lot of it's rail haulage arrangements in the dry years ...
- The slack was picked up by an expanding resources sector (resources sector more profitable for the privatised rail operators)
- As a consequence, in southern Queensland, the grain cartage task shifted heavily to road (cheaper, more flexible)

Examples of existing vehicle options

PM-semi



Rigid truck



B-double



Truck and pigtrailer



Limitations of existing vehicle options

Maximum Gross Combination Mass (GCM)	Tare Weight (t) (approx.)	Max Payload (t) (approx.)
Prime-mover semi		
42.5t	15 tonnes	27-28 tonnes
45t (HML)	Same	30 tonnes
B-Double		
62.5 t	20 tonnes	42.5 tonnes
68t (HML)	Same	48 tonnes

Limitations of existing vehicle options

Vehicle Combination	Carrying capacity (TEUs)	Nr of 40 ft boxes	Nr of heavy box (above 26-27t) legally carried
Prime-mover semi	2	1	1
B-Double	3	1	1

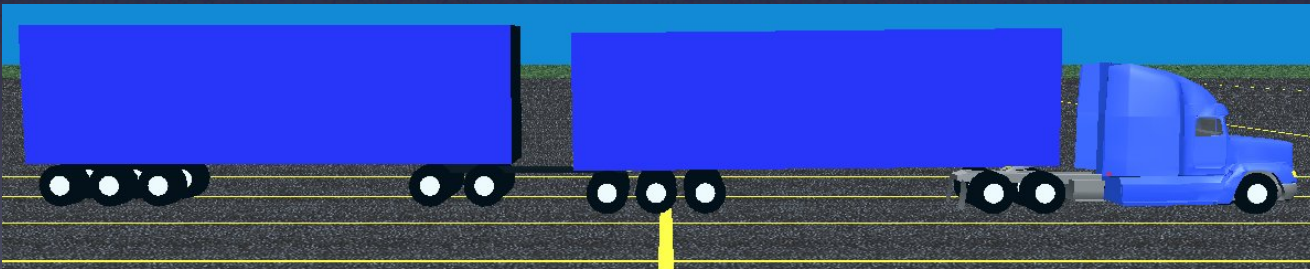
The Challenge

- **Traditional (prescriptive) vehicle options didn't work**
 - Lots of bulk grain semi-trailers
 - Massive queues & delays at the Port
 - Increased congestion
 - Handling facilities at Port overwhelmed
 - Negative impact on business
 - Overloaded road compliance staff
- Intensity of the freight task had a detrimental impact on highway linking Toowoomba to Brisbane
- Situation was not sustainable!
- Providing access to the wider network was not possible without ensuring that the vehicle combinations perform on the road (PBS compliance was needed)



PBS Solution

- Heavy vehicle combinations designed & built to Performance-based Standards (PBS)
- Up to 30 m long
- A relative small increase in length (4m) could provide a significant increase in freight capacity



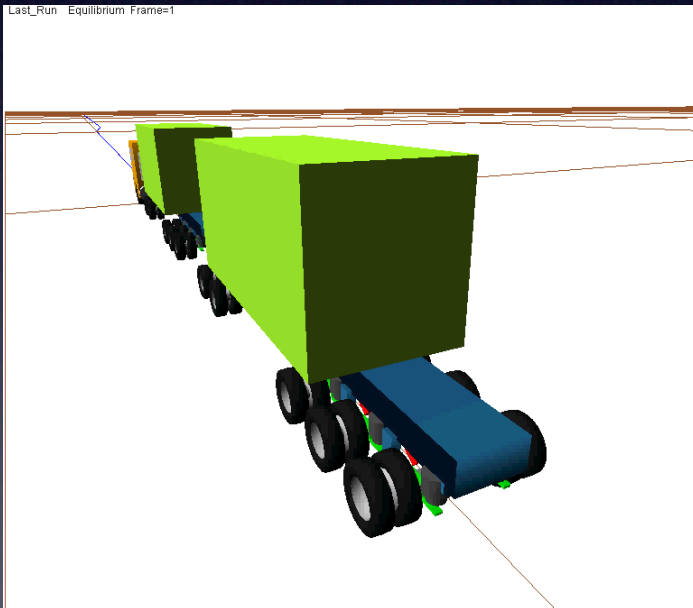
Examples – PBS A-doubles

- < 30m overall length, complies with PBS Level 2 standards
- First in Australia, PBS Level 2 “B” access
- Various vehicle options available
 - 2 x 40 foot containers
 - 2 x heavier containers
- Using technology to overcome access limitations
- Intelligent Access Program (IAP)
- On-board mass

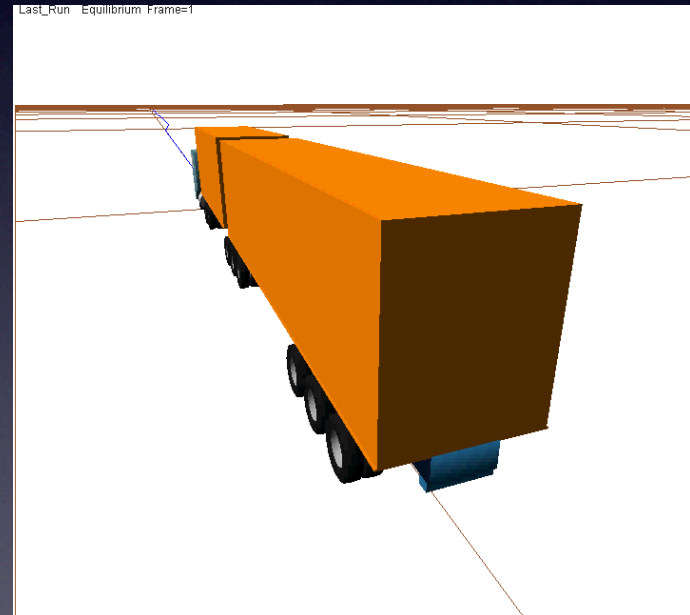


Improved dynamic performance

A-double
85t GCM, 29.6m
OAL

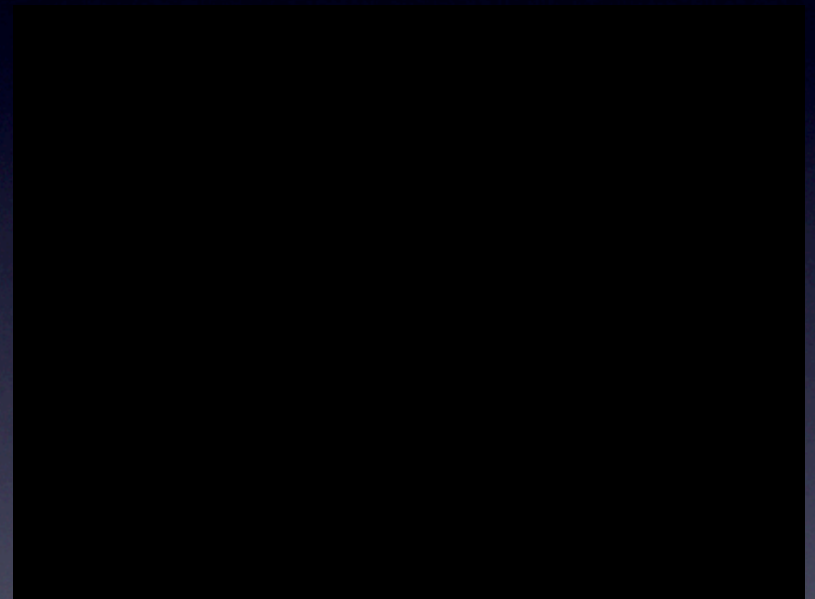


Austrroads 26m B-
double
62.5t GCM



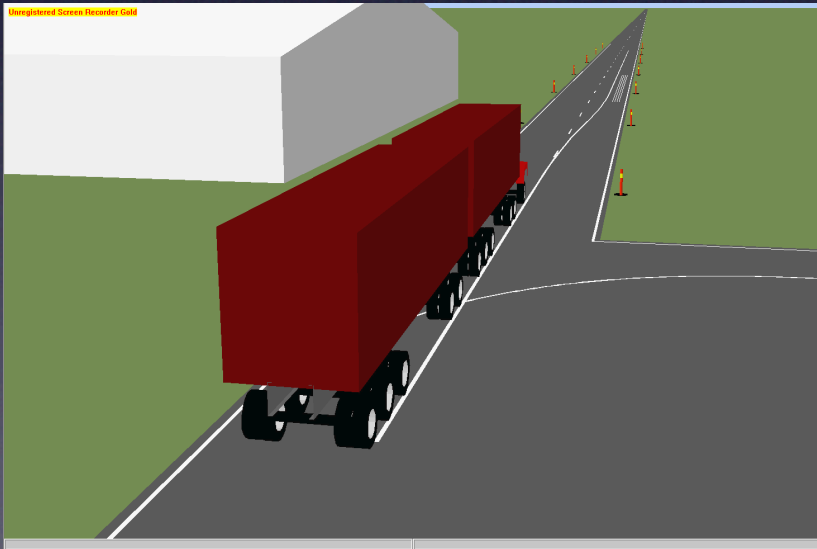
Developing New Technology

- Using technology or vehicle design to improve performance
- Innovative dolly
- Steer by wire system on the dolly in operation
- Safety considerations had to be addressed
- Regulatory framework is still limited
- PBS provides an opportunity for these developments

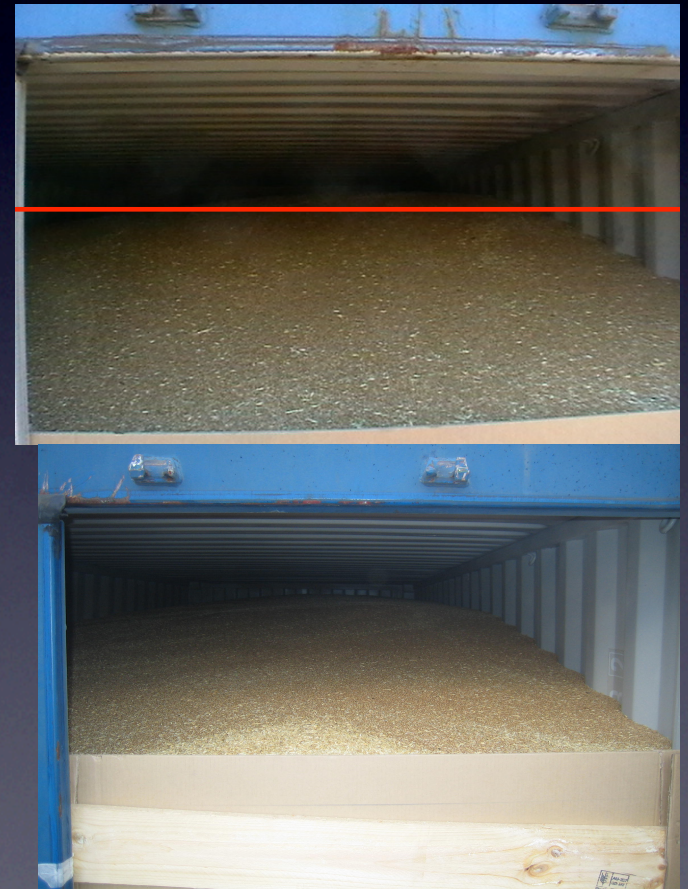


Performance is the key

- Performance outcomes can be achieved in different ways
 - Innovative design (smart dolly or active steering)
 - Load height and design restrictions



Simulation: ARRB



PBS Level 2B Super B-double

- < 30m overall length
- Complies with PBS Level 2 standards
- Active steering (trackaxle)
- PBS Level 2 “B” access
- GCM is around 76 tonnes



Access Conditions

- Vehicle combination must stay on the network it was assessed to operate on
- Intelligent Access Program (IAP)
- 6 critical bridges
- Axle group masses must not exceed permitted maximums
 - Reduced bridge ‘load factor’ (ie. heavier axle groups) must be accompanied by trip-by-trip assurance of masses
- On-board mass monitoring
- Number of passes are also monitored

The Network ...



Approved PBS routes key map - South East Queensland



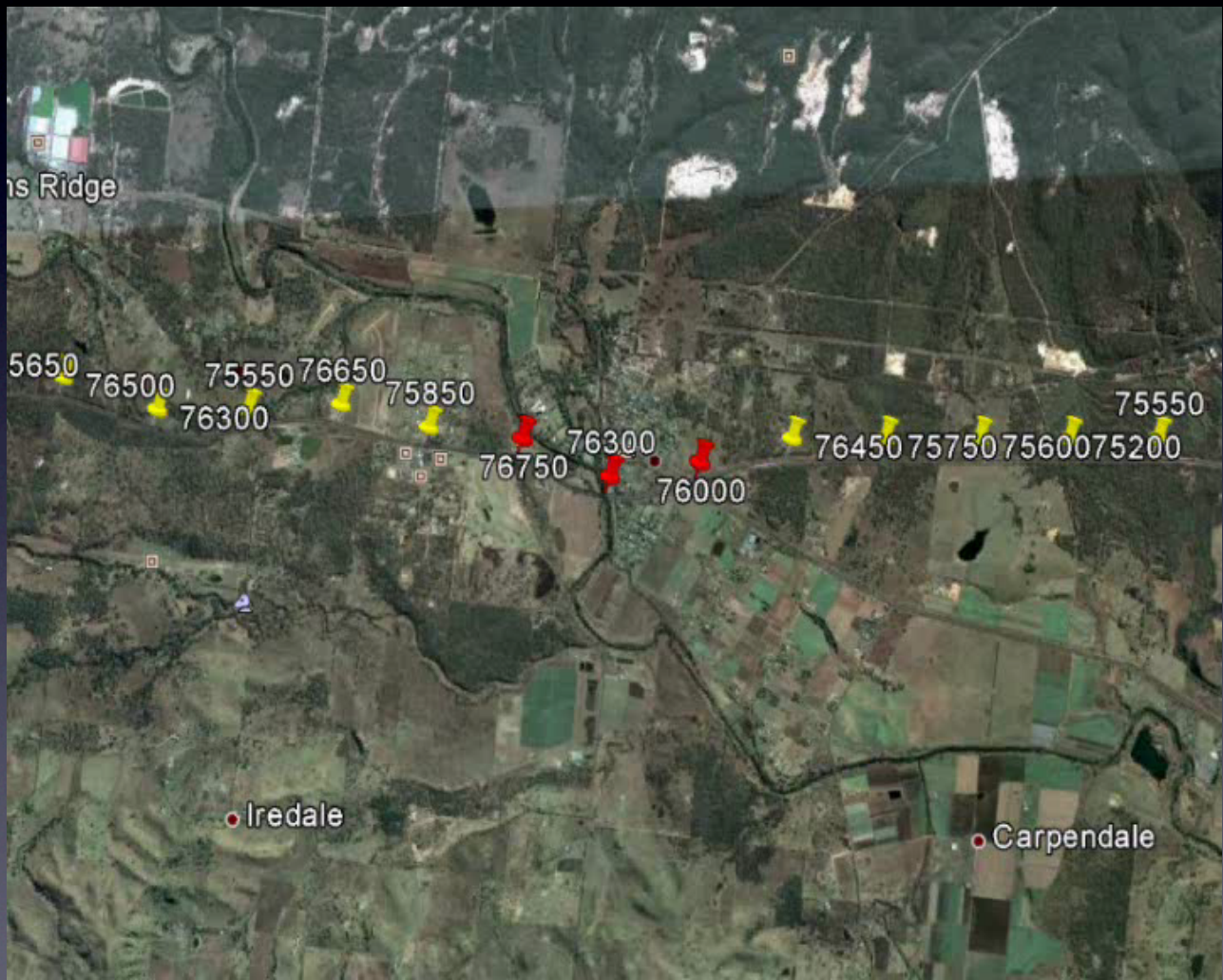
Legend

- PBS 2A route
- PBS 2B route
- PBS 3A route
- PBS 4A route
- R1 Class B PBS access restriction*

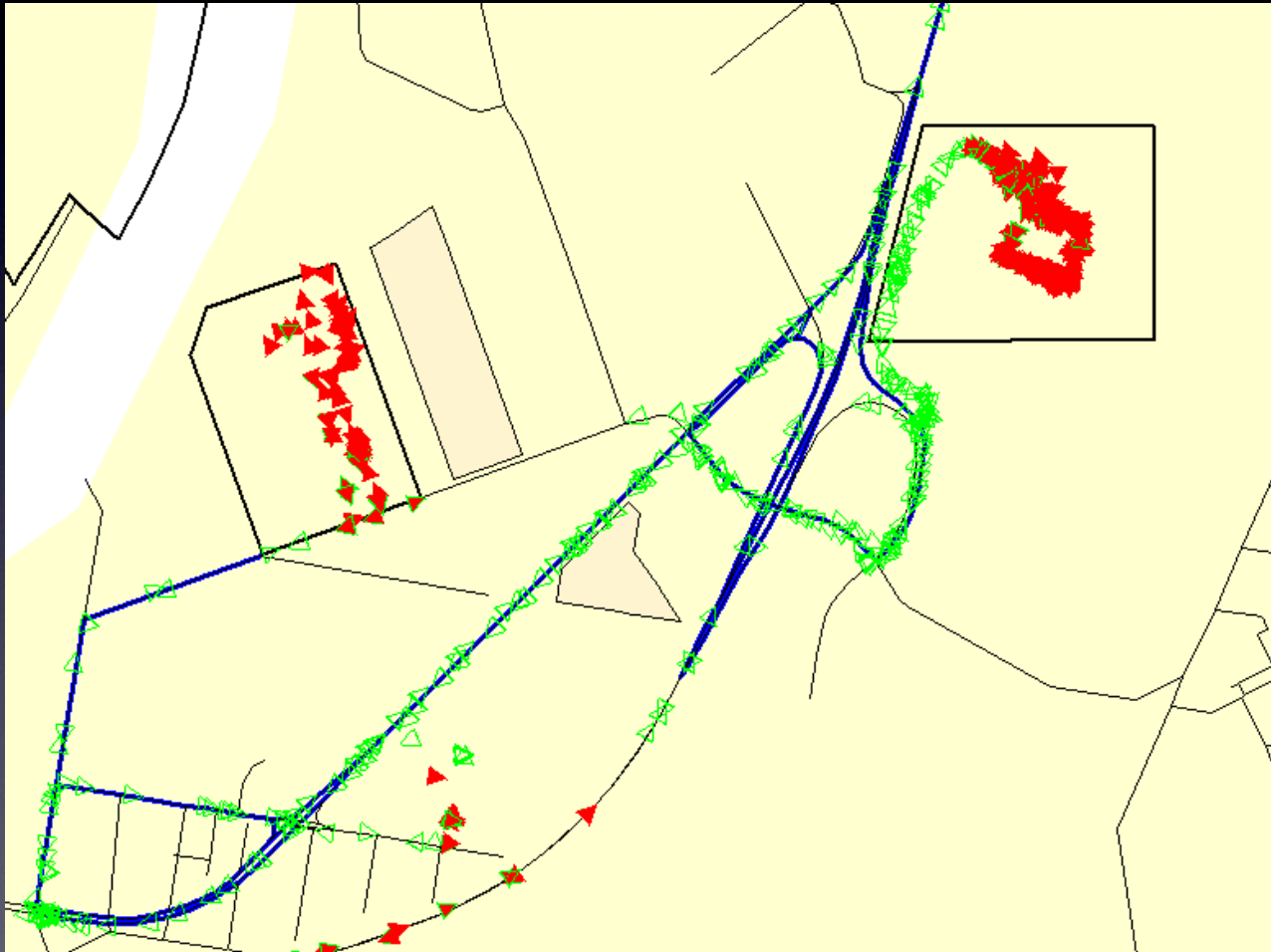
* Restrictions and Limitations apply. Refer to PBS Access Restrictions for detailed information.



Visualising the behaviour ...



Non Compliance Report (NCR)



Perception management

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Monster trucks threaten roads

Callum Johnson | 6th January 2011

MASSIVE trucks, now allowed to go through Toowoomba, could tear an already-battered Warrego Highway to pieces.

The Department of Transport and Main Roads has given a larger class of truck approval to travel from Toowoomba to the Port of Brisbane.

Toowoomba Regional Council requested an impact statement on the effect on the Warrego Highway, but was met with silence.

Under the approval, class 2B vehicles, including trucks with a maximum length of 30 metres, have been granted permission to travel along James Street and the Warrego Highway, through Toowoomba.

Previously, trucks over class 2A, or B-double trailers over 25 metres in length, would have to leave trailers behind before travelling through the city.

Mayor Peter Taylor said he was not impressed by the department declining to release information on the potential impacts.

"The decision was with Queensland Transport and they approved it without first giving us an impact statement," he said.

"We'll have to now wait and see what the overall impact will be on our roads."

Cr Taylor said his first priority was traffic safety.

He was also concerned about the damage the trucks would do to the roads.

"The Warrego Highway is already in an appalling condition, especially after recent rains, so I want to make sure this decision won't cause further damage.

"I'm not slamming the decision, just questioning it."

Transport Certification Australia CEO Chris Koniditsiotis said the approval could mean more efficient transport.

"(By using a larger) 2B vehicle, trips between Toowoomba and the Port of Brisbane could be slashed by up to 50 per cent," Mr Koniditsiotis said.

Mr Koniditsiotis said fewer truck trips would lessen the burden on Toowoomba's roads and reduce greenhouse gas emissions.



The Warrego Highway has already been damaged by heavy traffic and wet weather.

Poll

Should larger truck be allowed on the Warrego Highway?

Yes

No

[Vote](#) or [view results](#)

Summary

- Up to date 30 PBS level 2B combinations operating by 7 companies
- Demand is increasing
- A 50% reduction in trips for this specific freight task
- Significant fuel saving, less emission and road wear
- Productivity benefits resulting in a more efficient supply chain providing a more competitive export product
- PBS vehicles have excellent safety record
- Approximately 690 km of roads have been approved in Queensland for the operation of 2B vehicles
- Routes of strategic value consisting of a further 4,770 km are also currently being assessed

Conclusions

- Qld encourages a more integrated approach to delivering freight solutions
- Up to date we have 31 PBS level 2B combinations operating
- PBS can provide significant benefits to the transport operators and the broader community alike
 - Improved safety
 - Increased productivity
 - Reduced heavy vehicle numbers, emission, congestion
- Regulatory tools have to be developed
- More simplified processes are needed
- Policies of all governmental levels must be aligned

Thank you!

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